

Name: \_\_\_\_\_

## Classifying Stars Lab

Use the Hertzsprung-Russell (HR) diagram to answer the questions that follow (see other side).

- 1 - What does the Y axis on the diagram represent? LUMINOSITY
- 2 - What does the X axis represent? TEMPERATURE
- 3 - What do the letters of the alphabet represent? SPECTRAL CLASS OF STARS
- 4 - What will the spectral class & temperature tell you about each star? THE COLOR
- 5 - Find the Sun on the diagram. What is its: Temperature? 5900-6000K Luminosity? 1 Color? YELLOW
- 6 - Where on the diagram (top, bottom, left, right) would you find stars that are...?
  - hot & bright - TOP LEFT
  - hot & dim - BOTTOM LEFT
  - cool & bright - TOP RIGHT
  - cool & dim - BOTTOM RIGHT
- 7 - Using the luminosity of the stars & their surface temperatures, plot the location of each star on the HR diagram. Be sure to label with the correct NUMBER from the chart.
- 8 - Classify each star as a: main-sequence, giant, supergiant or white dwarf.
- 9 - Using both charts & the HR diagram, identify the color of each star.

Star	Surface Temperature (K)	Luminosity (relative to Sun)	Diameter (Solar diameters)	Type of Star	Color
1 - Sirius A	9100	22.6	2.03	MS - A	WHITE
2 - Arcturus	4300	115	31.5	GIANT - K	ORANGE
3 - Vega	10300	50.8	3.1	MS - A	WHITE
4 - Capella	5300	75.8	10.8	GIANT - G	YELLOW
5 - Rigel	11000	38,679	62	SUPER GIANT - B	WHITE
6 - Procyon A	6500	7.5	1.4	MS - F	YELLOW/WHITE
7 - Betelgeuse	2300	5520-14,968	662	SUPER GIANT - M	RED
8 - Altair	7800	11.3	1.6	MS - A	WHITE
9 - Aldebaran	4300	156-171	51.5	GIANT - K	ORANGE
10 - Spica	25300	2121	7.3	M.S. - O	BLUE
11 - Pollux	4500	31	8	MS - K	ORANGE
12 - Deneb	10500	66,500	116	SUPER GIANT - A	WHITE
13 - Procyon B	8700	0.0006	0.02	WHITE DWARF - A	WHITE
14 - Sirius B	24000	0.00255	0.022	WHITE DWARF - B	BLUE/WHITE

- 10 - What type of star has the greatest luminosity? CLASS O The least? CLASS M
- 11 - Look closely at the data in the chart. Is there a relationship between temperature & type of star? Explain.

YES, SPECTRAL CLASS IS DEPENDANT ON TEMP, THE ↑ THE TEMP, THE ↑ THE LIGHT/THE LIGHTS PURITY